

# ROTARY TILLER

REAR TINE  
TILLER

MODEL NO.  
GIL-39012B

MONTGOMERY  
**WARD**

owner's guide  
and PARTS LIST



#### **TIRE MOUNTING PRECAUTIONS**

#### **WARNING**

ONLY SPECIALLY TRAINED PERSONS SHOULD MOUNT TIRES. If beads are not properly seated, air pressure over 32 PSI can cause the bead to break and the assembly to explode with force sufficient to cause serious or fatal injuries.

Make certain rim is correct diameter and type. Clean rim, lubricate rim, beads and tube. Be sure beads are centered — Never exceed 32 lbs. inflation pressure when seating beads. Do not stand over tire while inflating. After beads seat, follow vehicle manufacturer's inflation recommendations.

MADE IN U.S.A. BD

## **IMPORTANT**

READ THIS MANUAL CAREFULLY AND KEEP FOR FUTURE REFERENCE

## CONTENTS

General Introduction .....	3
Safety Tips .....	3
Initial Servicing .....	4
Controls and Operation .....	4
Starting Your Rotary Tiller .....	5
Adjustments .....	6
Servicing and Maintenance .....	8
Storage .....	11
Tiller Parts .....	12 & 14
Tiller Parts List .....	13 & 15
Chain Case Parts .....	16
Chain Case Parts List .....	17
How to Order Replacement Parts .....	20

**IMPORTANT!** Record the unit model number and its serial number on the back page of this manual for future reference when ordering repair parts or identification if unit is lost or stolen.

The manufacturer reserves the right to make changes on and to add improvements upon its products at any time without notice or obligation. The manufacturer also reserves the right to discontinue manufacture of any product at its discretion at any time.

Notice to customers in the State of California –  
The engine on this unit is **NOT** equipped with a  
spark arresting muffler

**WARNING**  
**USE OR OPERATION OF THIS ENGINE ON ANY  
FOREST COVERED, BRUSH COVERED OR GRASS  
COVERED LAND WITHOUT A STATE APPROVED  
SPARK ARRESTER IN EFFECTIVE WORKING OR-  
DER CONSTITUTES A VIOLATION OF THE LAW OF  
THE STATE OF CALIFORNIA.**

## GENERAL INTRODUCTION

This Owner's Guide has been especially prepared to provide the information needed to operate your tiller with greater satisfaction. Read this Owner's Guide and the engine instructions carefully. Be sure you know what the controls are for and how they operate. The care your tiller requires is small, but important. Keep it clean and well lubricated. With proper care and operation, as explained in this manual, you will obtain long and efficient service.

This tiller is shipped completely assembled. After reading this manual and servicing tiller the tiller is ready to operate.

Information regarding operation and maintenance of the engine is not included in this manual. A separate instruction manual is included with your tiller and should be consulted for all information concerning engine adjustments and operation.

## SAFETY TIPS

### Don't Forget



that **SAFETY**  
starts with you!

Your rotary tiller was built to the highest standards in the industry. However, a **rotary tiller is only as safe as the operator**. As with any type of power equipment, carelessness or error on the part of the operator can result in injury. Please read and follow these instructions on safe operation and be certain anyone using this rotary tiller is familiar with these simple rules:

- Inspect work area and clear any objects that are not earth or mulch.
- Improper use of the rotary tiller can result in injury. Give complete and undivided attention to the work you are doing.
- Know the controls and how they operate.
- Know how to stop the rotary tiller and engine instantly.
- Disengage power and stop engine before cleaning, removing obstacles, or making adjustment.
- Keep children and pets a safe distance away from rotary tiller.
- Do not allow anyone to operate rotary tiller without proper instruction and supervision.
- Exercise caution to avoid falling.
- Don't start the engine and tines until you are ready to start tilling. Stop the engine whenever you leave the machine.
- Disengage clutch before starting engine. Keep hands, feet and clothing away from power-driven parts. Wear adequate footwear to prevent foot injury.
- Keep rotary tiller in good operating condition and keep safety devices in place.
- Do not till near underground electric cables or irrigation hoses.
- Store gasoline in a safe container. Store the container in a cool, dry place. **Not in the house or near heating appliances.**
- Open doors if engine is run in garage. Exhaust gases are dangerous.
- Fill gas tank outdoors. Avoid spilling gasoline. Don't fill tank while engine is running or while you are smoking.
- The replacement of any part on this product by other than the manufacturer's authorized replacement part may adversely affect the performance, durability or safety of this product.

## INITIAL SERVICING

1. Before starting the engine, refer to the engine instructions. Be certain the the engine crankcase is filled with the proper type oil and that all engine service instructions have been followed completely.
2. Fill fuel tank with a clean, fresh, lead-free or leaded "regular" grade of automotive gasoline. Do not mix oil with gasoline.
3. All nuts and bolts should be checked and tightened during the first two (2) hours of use. Periodic checks should be made thereafter.
4. The tires are normally over-inflated for shipping. The recommended tire pressure is 20 lbs.

## CONTROLS AND OPERATION

This tiller has the following controls: (Figure 1)

### ON ENGINE

- A. Engine Rewind Starter
- B. Engine Choke

### ON HANDLE BAR

- A. Clutch Control Lever
- B. Throttle Control and Engine Stop Lever
- C. Handle Control Lever

### ON TINE SHIELD

- A. Depth Control Lever

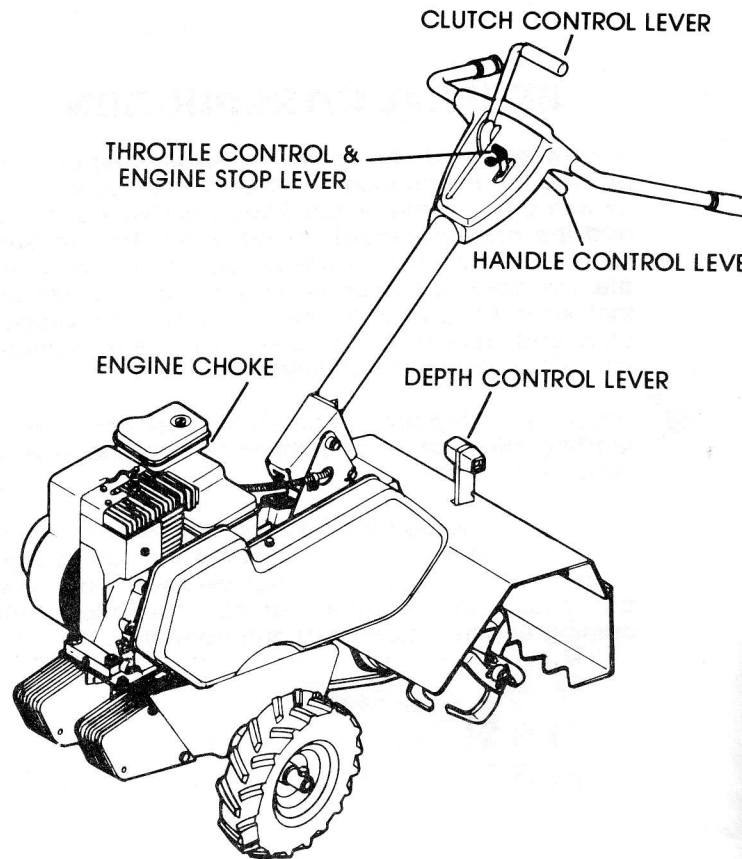


FIG. 1

## HANDLE BAR

The handle bar has two operating locations (see Figure 2). In the tilling location, the tines are immediately in front of the operator. In the transport location, the engine is immediately in front of the operator. Use the handle control lever to unlock the handle, then position the handle in the desired location.

## HANDLE CONTROL LEVER

The handle control lever controls the handle swing location and the handle height. To swing the handle bar, pull back on the lever. Swing to either right or left to the desired position, then release the control lever and swing back and forth slightly until the handle latch engages. To adjust handle height, pull back on control lever without swinging handle. Move handle up and down slightly until handle locks in the desired height position. **NOTE:** When pulling back on the handle control lever, the clutch control lever is automatically moved to the neutral position.

## CLUTCH CONTROL LEVER

The clutch control lever is a single lever that engages and disengages drive to both the tines and the wheels.

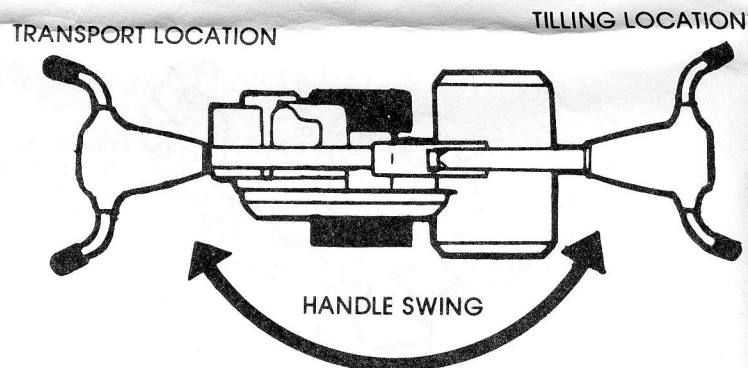


FIG. 2

**When the handle bar is in the tilling location,** pushing forward on the control lever engages the drive to both the tines and the wheels at a tilling speed. **CAUTION:** Before pushing lever forward, be certain depth control setting is correct for soil conditions. (See Depth Control Lever)

Pulling back on clutch control lever from forward drive to neutral disengages the drive to the tines and wheels. Further pulling back on the lever engages the reverse drive to the wheels and the tiller moves backwards at transport speed. (Tines do not rotate in reverse.) When released, the control lever will return to neutral position.

When the handle bar is in transport location, the clutch control lever will only operate by pulling the lever back. This engages the drive to the wheels and the tiller moves forward at transport speed. When released, the control lever returns to neutral.

## DEPTH CONTROL LEVER

**CAUTION:** Do not adjust tilling depth with the tines rotating. Place clutch control lever in the neutral position before making adjustments of depth control.

The depth control lever is the "key" to easy tilling operation. The exact setting of control will vary with soil conditions.

When starting a tilling operation, start with the depth control lever in the shallowest setting (Figure 3). As you become acquainted with the soil, keep raising the control lever so that deeper tilling can be done.

**CAUTION:** If depth control lever is raised too high, the tines will propel the tiller forward pushing the drive wheels along the ground at an uncontrolled speed.

When starting to till unworked soil or sod, start in the shallowest setting of the depth control lever and raise the depth control one notch at a time until you arrive at a satisfactory location of the lever so that the deepest tilling can be done without having uncontrolled forward speed.

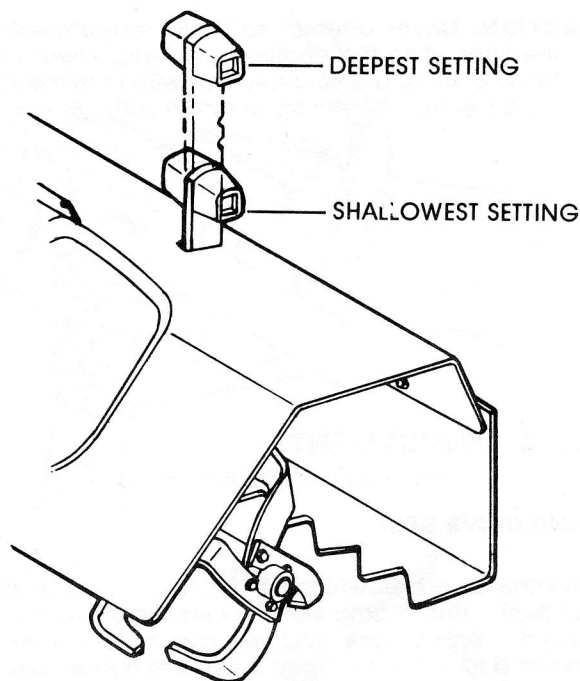


FIG. 3

## OPERATING SUGGESTIONS

When you start to till in the garden, remember to take it easy. Do not try to take too deep a cut in a pass through sod or hard ground, or soil that has not been tilled for several months or years.

Do not lean on the handle bars because this takes weight off the front wheels, reduces traction, and causes the tines to attempt to propel the tiller instead of just digging.

There are several schools of thought as to the best method to till. It is suggested you try the various methods and select the one you are most comfortable with to get the results you desire.

- A. On each succeeding pass, overlap one-half of the previous pass.
- B. On the second pass, leave a 1/2 width untilled and till this width on the third pass. Repeat on the fourth pass, leaving a 1/2 width untilled and on the fifth pass, till the untilled strip.
- C. Use A or B and repeat at 90 degrees.

Remember the key to easy tilling is the depth control setting. Do not try to take too deep a cut in harder soils.

## STARTING THE TILLER

Now that you have located the controls and understand their operation and function, it is time to start your tiller.

1. Place clutch control lever in neutral.
2. Push throttle control lever ahead to fast position.
3. Adjust engine choke to proper position. (Refer to engine starting procedures in engine section.)
4. Start engine by pulling starter cord.

### To Stop Engine

1. Place clutch control lever in neutral position.
2. Pull throttle control and engine stop lever to the stop position.

## ADJUSTMENTS

**CAUTION:** Never attempt to make adjustments on the tiller while the engine is running. Always stop the engine and disconnect the wire from the spark plug before attempting to make adjustments.

### BELT ADJUSTMENTS

#### TINE DRIVE BELT

The tine drive belt, which is the outer belt, is adjusted by loosening the clamp cap screws (Figure 4) and rotating the entire case and tine assembly. Rotate case forward to slacken belt and back to tighten belt. With the clutch control lever in the forward drive position, the distance between the inside of the belt should be approximately 3/4 inch as shown in Figure 5. Tighten the clamp bolts securely after adjustment. Place depth control in shallowest setting and start engine. With control lever in neutral position, tines should not rotate. If tines rotate, readjust to increase belt slack until tines do not drive in neutral.

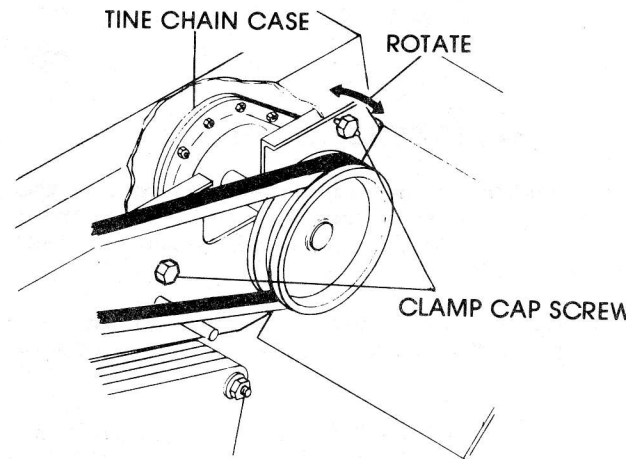


FIG. 4

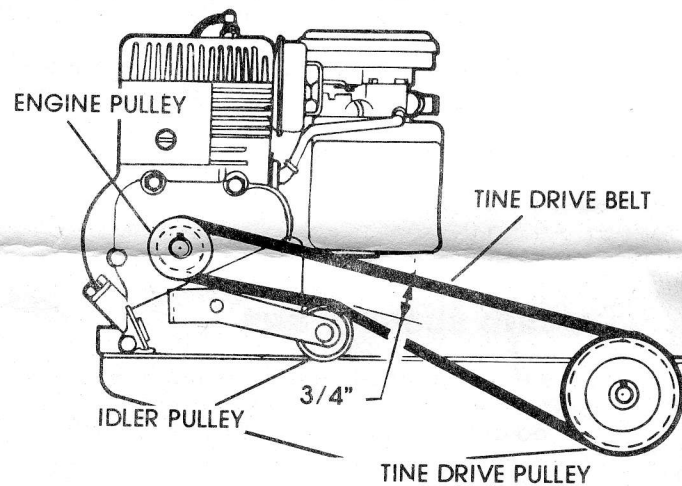


FIG. 5

#### WHEEL DRIVE BELT

The wheel drive belt, which is the inner belt, is adjusted by moving the right hand idler (Figure 6). With the clutch control lever in the neutral position, the traction belt should have approximately 1/4 inch between the upper idler and the belt (Figure 6). The adjustment idler should be positioned to obtain this 1/4 inch. Moving idler up will increase clearance and down will decrease clearance.

**NOTE:** The adjustment idler has four locations and is not slot mounted. The machine screw must be removed from the mounting frame when making this adjustment.

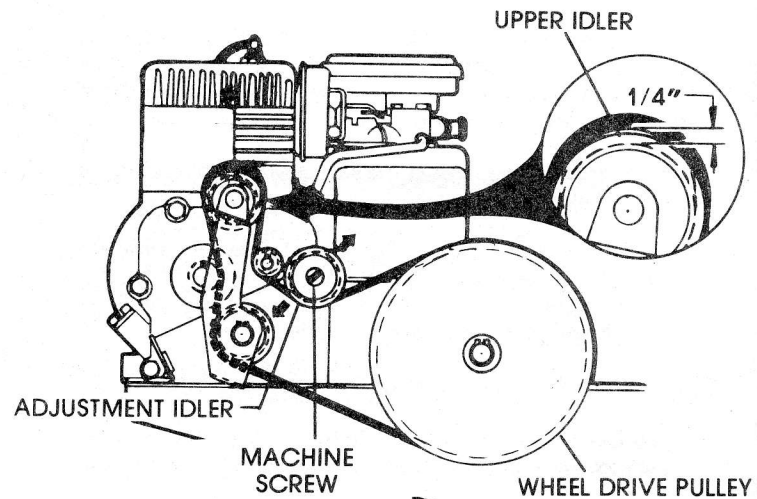


FIG. 6

## HANDLE CONTROL LEVER ADJUSTMENT

The handle control adjustment (Figure 7) has been set for proper operation and should not need to be adjusted. Should the handle control lever (Figure 7) become loose after many hours of operation, tighten the adjustment nut only enough to eliminate any excess movement in the handle control lever.

**CAUTION:** Do not overtighten adjustment nut. This may result in failure of handle bar latch system to fully engage and hold handle in desired position.

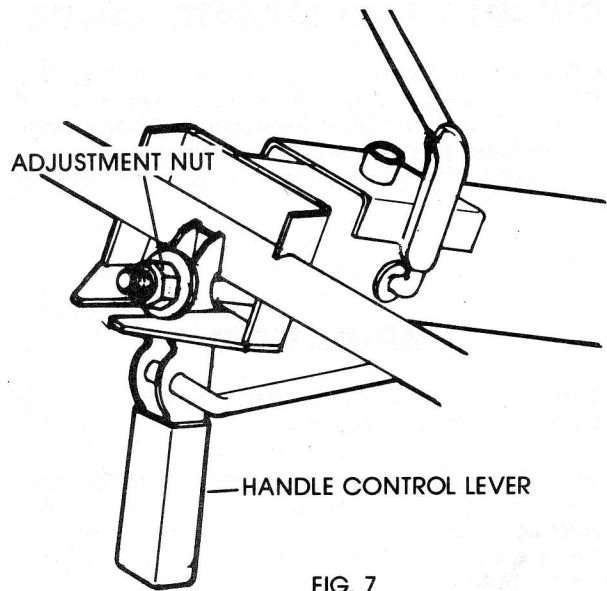


FIG. 7

## CLUTCH CONTROL LEVER ADJUSTMENT

The clutch control lever is pre-set for neutral shift position. An adjustment means is provided, however, to center the clutch control lever in the slot on the handle shroud should it become necessary due to wear. This adjustment is located at the handle pivot point (Figure 8).

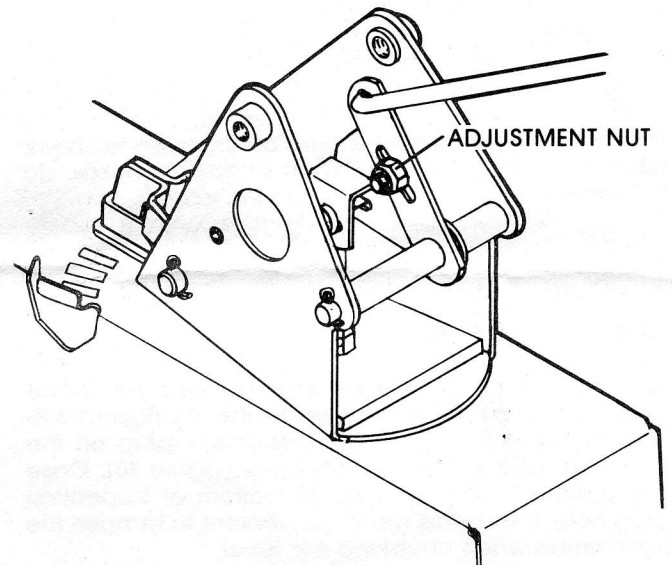


FIG. 8

### TO ADJUST:

1. Place handle bar in tilling location and adjust handle bar to lowest position.
2. Loosen the adjustment nut (Figure 8).
3. Move the clutch control lever on the handle bar until centered in the neutral area (Figure 9).
4. Retighten the adjustment nut (Figure 8).

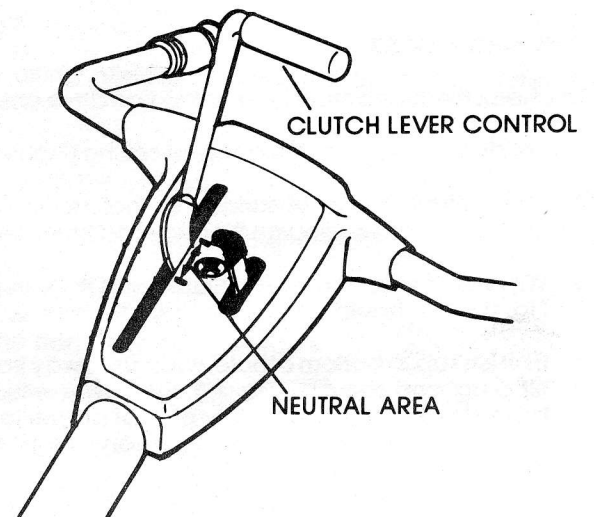


FIG. 9

## SERVICING AND MAINTENANCE

The best assurance you have of getting the most dependable service from your tiller is to keep the unit clean, free of rust, and well lubricated. Check bolts often to be sure they are kept tight. When the tiller is not being used, it should be stored in a dry place out of the weather.

### LUBRICATION

1. **Engine:** Refer to engine operating instructions and requirements for all engine lubrication.
2. **Chain Cases:** Both the wheel drive and the tine drive cases are amply filled with lubricant and should not require additional lubrication. If a leak develops, add lead base (EP) SAE 140 heavy duty oil (Part 4890) as required to bring to proper oil level. Check oil level every 25 hours.

The following procedure should be followed to check lubricant level of cases. When checking cases, do not drain excess lubricant out of the cases.

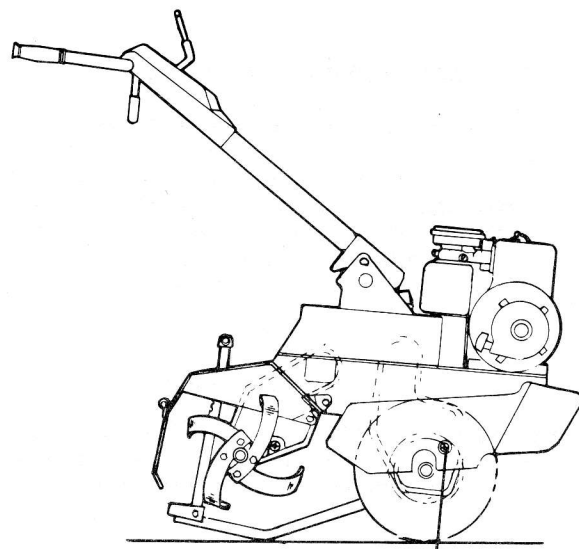
#### WHEEL DRIVE CASE

To check the oil level of the wheel drive case, place the depth control lever down to the shallowest setting (Figure 3). Remove the inspection plug on the right side of the wheel drive case (Figure 10). Case has sufficient oil if oil is up to bottom of inspection plug hole. It may be more convenient to remove the right wheel when checking this level.

#### TINE DRIVE CASE

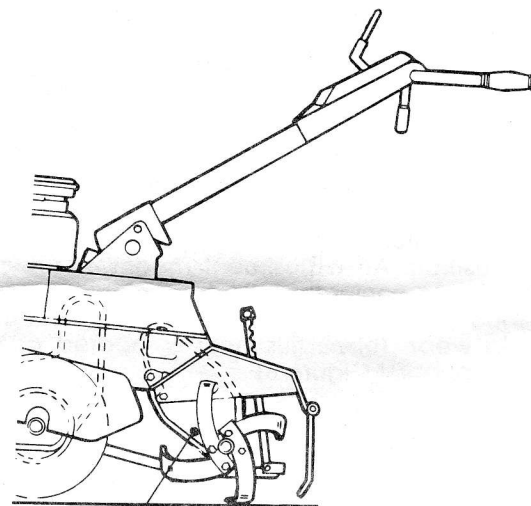
To check the lubrication level of the tine drive case:

1. Set depth control at the deepest setting (Figure 3).
2. Place tiller on a level surface so that the tines and the wheels are setting on the ground, Fig. 11B.
3. Wipe dirt away from oil level plug and remove plug, Fig. 11A. Oil should be up to the bottom of hole.
4. If oil isn't up to bottom of hole, wipe dirt away from oil fill plug and remove, Fig. 11B. Fill slowly with lead base (EP) SAE 140 heavy duty oil until proper level is reached. Replace oil level plug and oil fill plug. Wipe off excess oil.



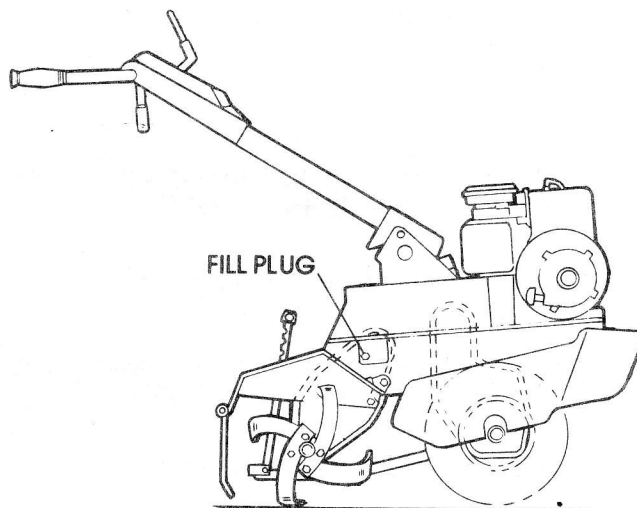
OIL LEVEL & FILL PLUG

FIG. 10



OIL LEVEL PLUG

FIG. 11A



FILL PLUG

FIG. 11B



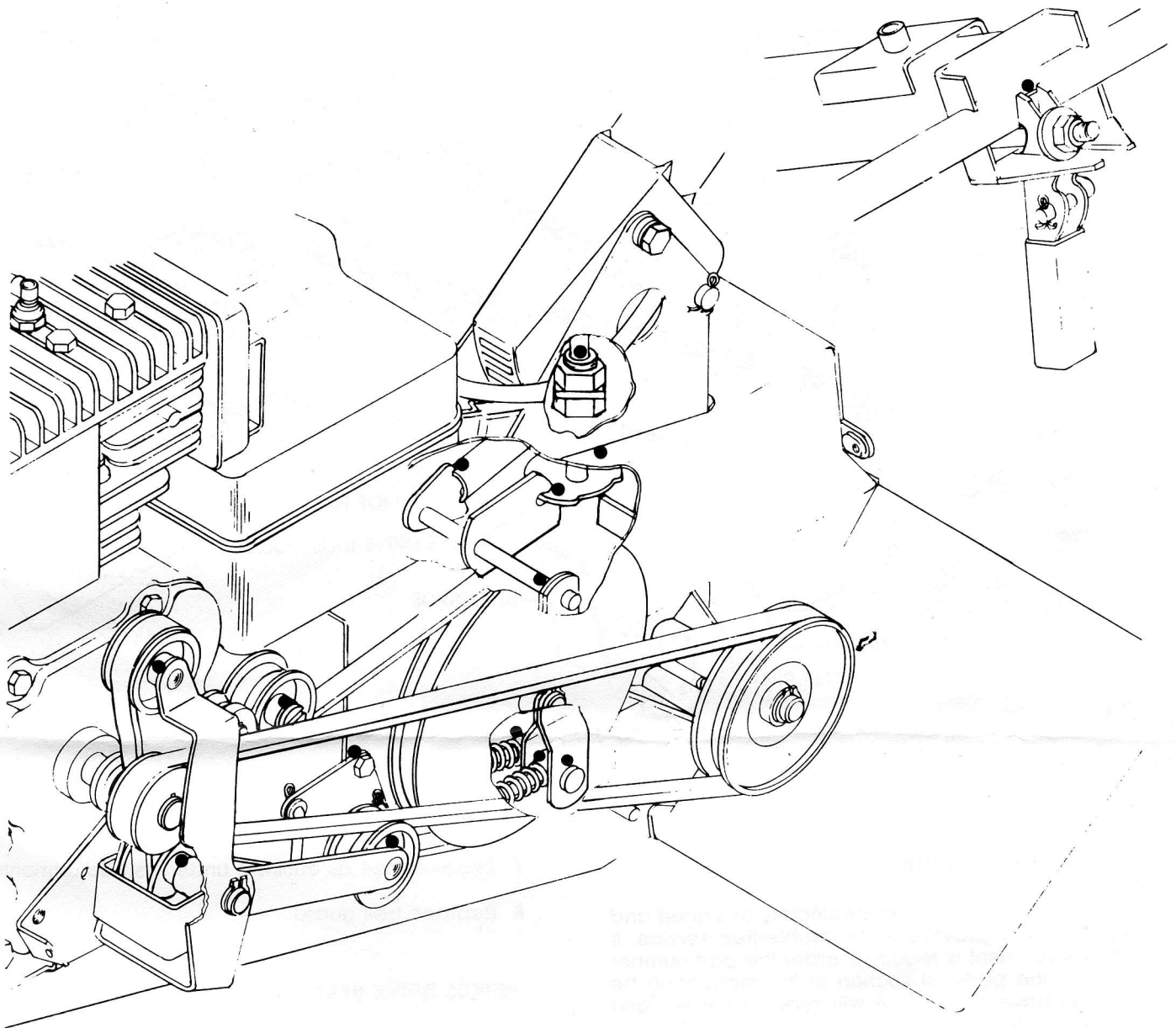


FIG. 12

To add lubricant to either chain case it is necessary to tip tiller on its left side to expose level plugs of each case. Add sufficient lead base (EP) SAE 140 heavy duty oil (Part 4890) to bring to proper oil level.

3. The following points should be lubricated with engine oil every eight hours (see Figure 12). Be-

fore oiling attempt to clean off area to be lubricated.

- A. The 4 idler pulleys.
- B. The handle plunger shaft and disc.
- C. The control rod swivels.
- D. The handle rotating surface.
- E. Cam and detent ball and shaft.
- F. Handle control lever.
- G. Tine drive bellcrank pivot.

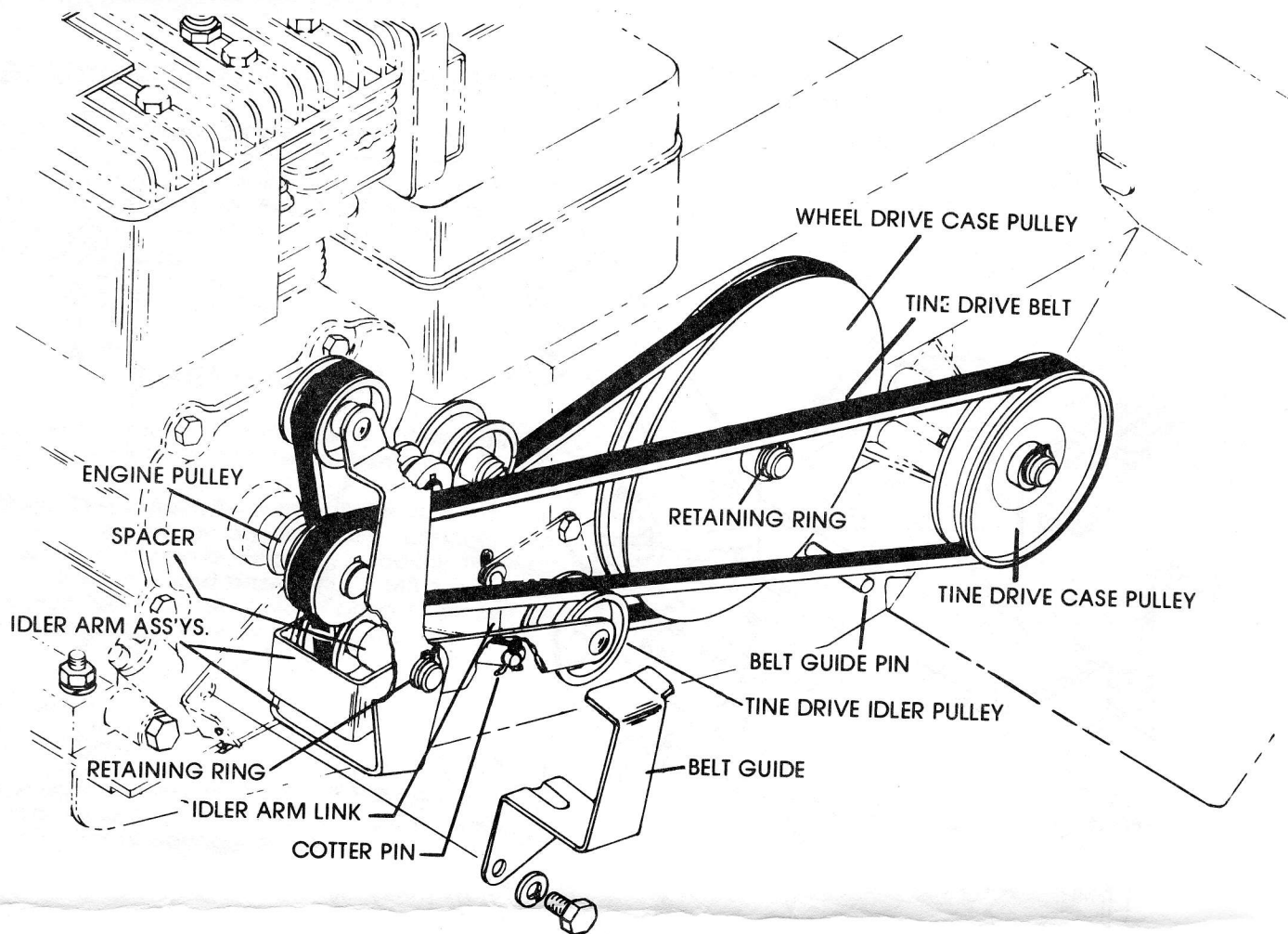


FIG. 13

## BELT REPLACEMENT

The belts on this tiller were specifically designed and engineered to provide long, trouble-free service. If belt replacement is required, order the part number shown in the parts list section of this manual, to be sure you have a belt that will provide the life and service required.

### TINE DRIVE BELT

1. Place the clutch lever in the neutral position.
2. Remove the belt guard.
3. Remove the belt guide (Figure 13).
4. Slip the belt off the tine drive case pulley.
5. Remove belt from the engine pulley and slip out between engine pulley and idler arm.
6. To replace belt, reverse above procedure. Be sure belt is on top of tine drive idler pulley and the belt guide pin near the tine drive case pulley (Figure 13).

7. Readjust belt as outlined under belt adjustments.
8. Replace belt guard.

### WHEEL DRIVE BELT

1. Remove the tine drive belt per instructions above.
2. Remove the retaining ring in the idler arm shaft (Figure 13).
3. Remove the belt from the wheel drive case pulley.
4. Remove wheel drive pulley by removing retaining ring and sliding pulley off shaft. (CAUTION: Do not lose woodruff key in drive pulley shaft.) (Figure 13).
5. Remove cotter pin from idler arm link (Figure 13).
6. Slide idler arm assemblies out until the spacer can be slid out between the idler and idler arm. Remove belt. To replace belt, reverse above procedure. Be sure belt is turned inside out (wide side on pulleys) before installing in pulleys (Figure 13).
7. Readjust belt as outlined under belt adjustments.

## STORAGE

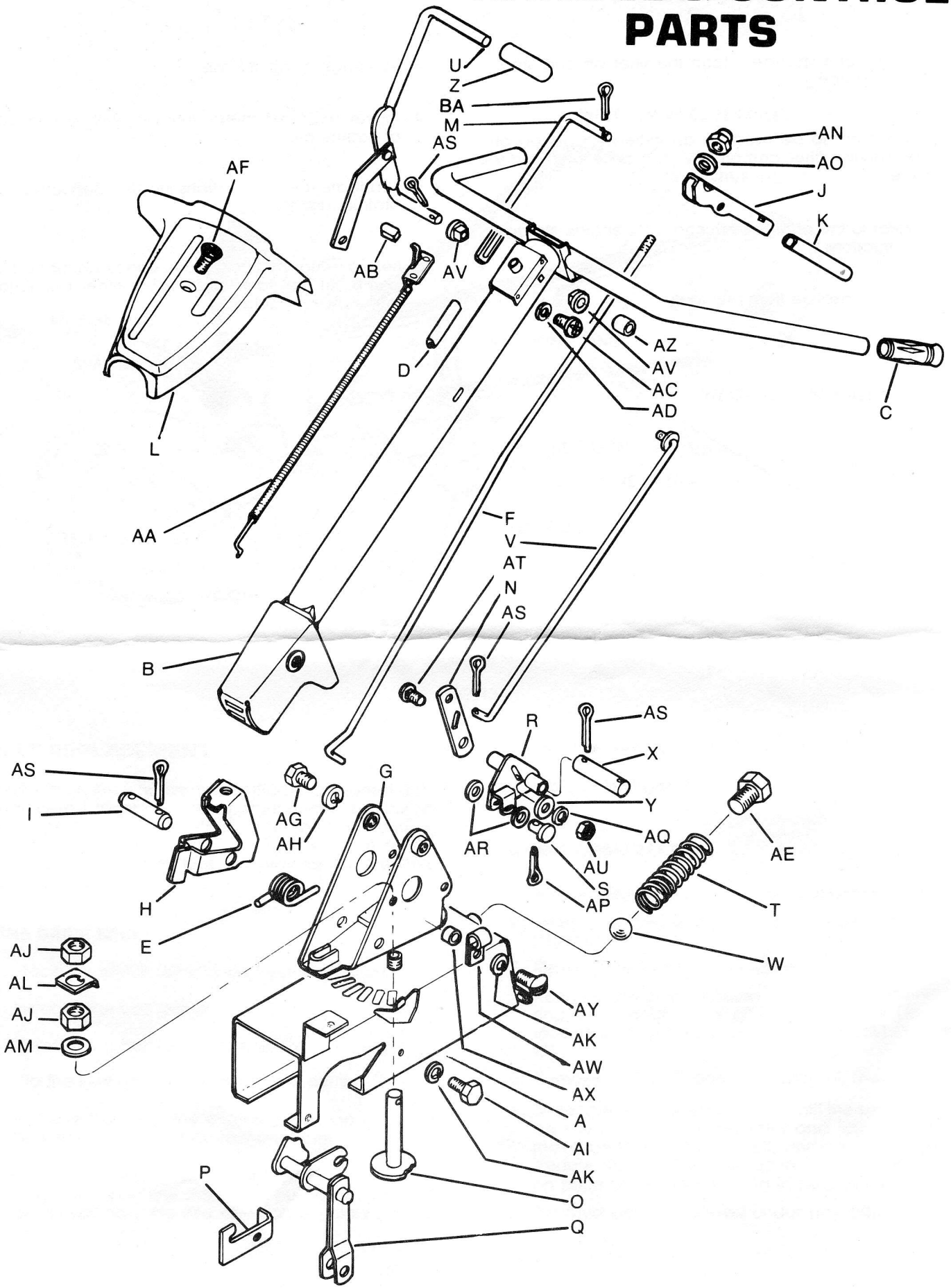
For short term storage, clean the tiller off and store in a dry place.

If tiller is not to be used for an extended period of time, service tiller completely and store it in a dry place.

1. Refer to the engine instructions for engine storage instructions.
2. Drain gasoline from fuel tank.

3. Run engine until it stops.
4. Cover exposed metal surfaces with a thin coat of engine oil.
5. Lubricate per instructions under "Servicing and Maintenance".
6. Before using the tiller again, check all lubrication points, fill fuel tank, and follow other instructions in the owner's guide.

# HANDLE & CONTROLS PARTS

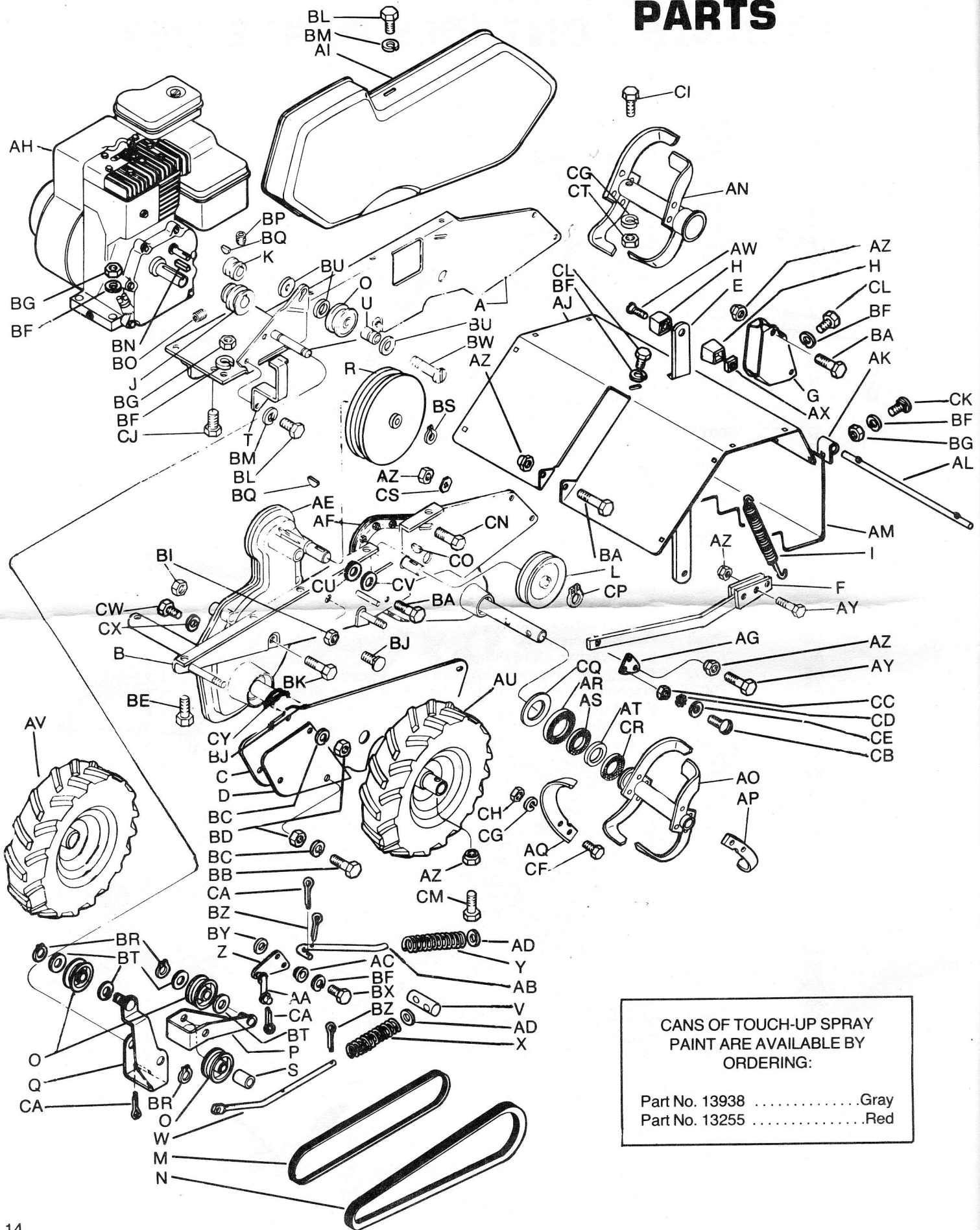


# HANDLE & CONTROLS PARTS LIST

REF. LET.	PART NO.	DESCRIPTION	QTY.
A	200469	Tunnel Assembly	1
B	200470	Handle Assembly	1
C	1183	Grip	2
D	200612	Slide	1
E	200110	Spring	1
F	200066	Control Rod	1
G	200473	Pivot Assembly	1
H	200460	Pawl Assembly	1
I	200420	Pin	1
J	200074	Lever	1
K	33580	Grip	1
L	200075	Shroud	1
M	200323	Link Assembly	1
N	200768	Lever	1
O	200179	Plunger Assembly	1
P	200177	Retainer Assembly	1
Q	200195	Cam Assembly	1
R	200196	Bellcrank Assembly	1
S	200242	Clevis Pin	1
T	200055	Spring - Detent	1
U	200324	Control Handle Assembly	1
V	200462	Control Rod Assembly	1
W	33595	Ball	1
X	200045	Pin	1
Y	2679	Spacer	1
Z	200034	Grip	1
AA	200623	Throttle Control Assembly	1
AB	36285	Grip - Throttle Control	1
AC	12850	Pan Hd. Screw - No. 8	2
AD	*70672	Lock Washer - 3/16 Plated	2
AE	*71072	Cap Screw - Hex Hd. - 9/16-18 x 1 1/4 Plated	1
AF	*70022	Machine Screw - Oval Hd. - Phil. 5/16-18 x 1 Plated	1
AG	*70233	Cap Screw Hex Hd. 3/8-16 x 1 Plated	2
AH	*70649	Lock Washer 3/8 Plated	2
AI	*70087	Cap Screw - Hex Hd. 1/4-20 x 1/2 Plated	1
AJ	*70588	Nut - Hex Jam 3/4-16 Plated	2
AK	*70643	Lock Washer 1/4 Plated	2
AL	201120	Lock	1
AM	18744	Thrust Washer	1
AN	*70631	Nut - Cone Lock 3/8-16 Plated	1
AO	*70703	Washer - Med. Flat 3/8 Plated	1
AP	*70715	Cotter Pin 1/16 x 1/2 Plated	1
AQ	*70646	Lock Washer 5/16 Plated	1
AR	*70683	Washer SAE Flat 1/4 Plated	2
AS	*70721	Cotter Pin 1/8 x 3/4 Plated	8
AT	*70443	Carriage Bolt 5/16-18 x 1 Plated	1
AU	*70629	Nut - Cone Lock 5/16-18 Plated	1
AV	16066	Bushing	2
AW	32861	Clamp	1
AX	24993	Spacer - Clamp	1
AY	*70397	Machine Screw Rd. Hd. - 1/4-20 x 5/8 Plated	1
AZ	200243	Spacer	1
BA	*70740	Pin, Cotter 3/32 x 5/8 Plated	2

\*Common hardware. May be purchased locally.

# FRAME AND DRIVE PARTS



CANS OF TOUCH-UP SPRAY  
PAINT ARE AVAILABLE BY  
ORDERING:

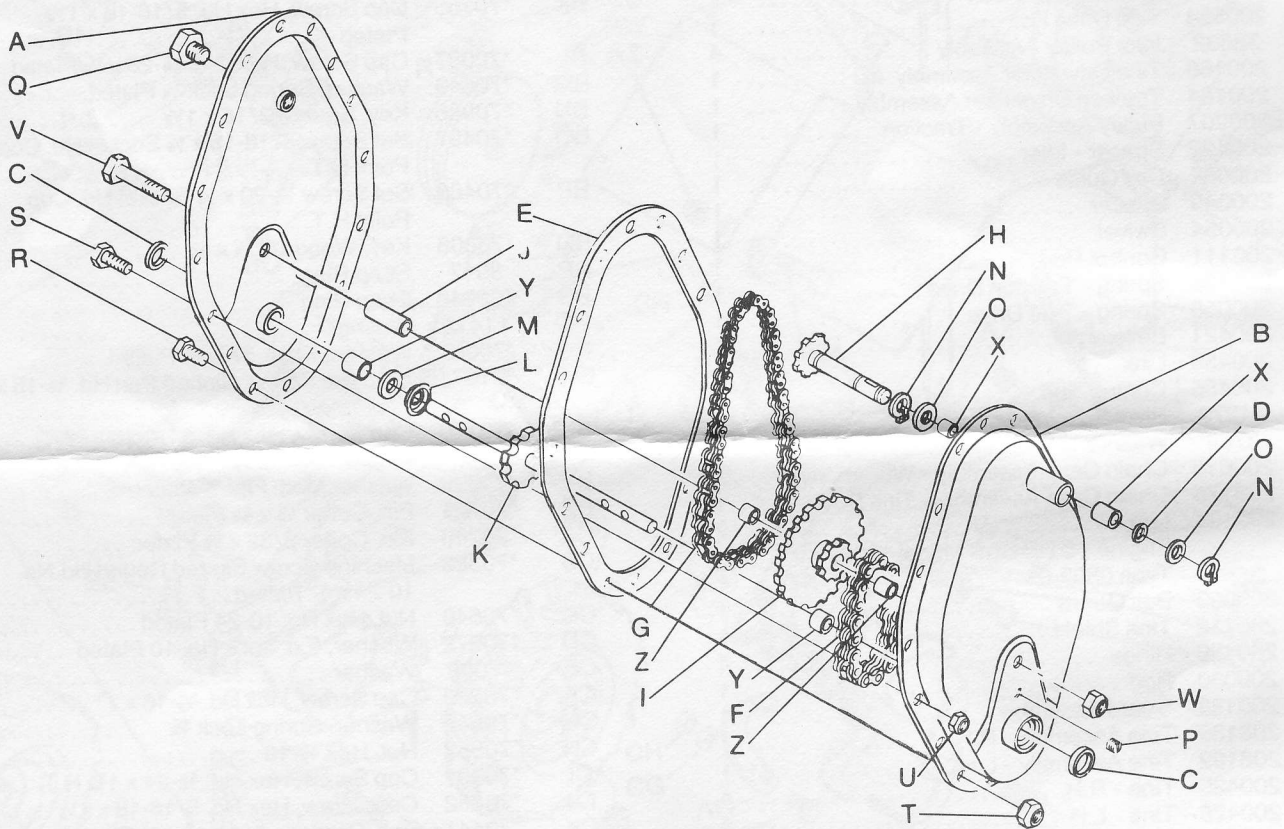
Part No. 13938	.....	Gray
Part No. 13255	.....	Red

# FRAME AND DRIVE PARTS LIST

Ref. Let.	Part No.	Description	Qty.	Ref. Let.	Part No.	Description	Qty.
A	208139	Frame Assembly - R.H.	1	AZ	*70629	Nut, Cone Lock 5/16-18 Plated	8
B	208140	Frame Assembly - L.H.	1	BA	*70177	Cap Screw, Hex Hd., 5/16-18 x 2 1/4 Plated	3
C	200071	Counter Weight	30	BB	*70882	Cap Screw, Hex Hd., 3/8 16 x 3 Plated	2
D	200078	Counter Weight	8	BC	*70649	Washer, Spring Lock, 3/8 Plated	6
E	200165	Depth Control Assembly	1	BD	*70553	Nut, Hex 3/8-16 Plated	6
F	208810	Skid Assembly	1	BE	*70137	Cap Screw, Hex Hd. 5/16-18 x 5/8 Plated	8
G	200184	Support Assembly	1	BF	*70646	Washer, Spring Lock 5/16 Plated	19
H	24897	Handle	2	BG	*70549	Nut, Hex 5/16 Plated	10
I	200197	Spring	1	BI	*70603	Nut, Self Lock 5/16-18 Plated	2
J	200063	Engine Pulley	1	BJ	*71073	Bolt, Carriage 5/16-18 x 2 1/4	1
K	200028	Camshaft Pulley	1	BK	*70165	Cap Screw, Hex Hd. 5/16-18 x 1 5/8 Plated	1
L	208142	Pulley Assembly - Tines	1	BL	*70087	Cap Screw, Hex. Hd. 1/4-20 x 1/2 Plated	4
M	200555	Traction Drive Belt	1	BM	*70643	Washer, Spring Lock 1/4 Plated	4
N	200554	Tine Drive Belt	1	BN	*70985	Key, Square 3/16 x 1 1/2	1
O	33632	Idler Pulley Assembly	4	BO	*70497	Set Screw 5/16-18 x 1/4 Socket Hd. Cup Point H.T.	2
P	200166	Tine Drive Idler Assembly	1	BP	*70488	Set Screw 1/4-20 x 1/4 Socket Hd. Cup Point H.T.	2
Q	200164	Traction Drive Idler Assembly	1	BQ	*70808	Key, Woodruff 1/8 x 5/8	2
R	200207	Pulley Assembly - Traction	1	BR	3917	Snap Ring	3
S	200422	Spacer - Idler	1	BS	200318	Snap Ring	1
T	200064	Belt Guide	1	BT	11412	Washer	4-7
U	200049	Spacer	1	BU	*70687	Washer, Flat - SAE 3/8 Plated	3
V	200054	Swivel	1	BW	*71071	Machine Screw, Slotted Pan Hd. 3/8-16 x 1 3/4 Plated	1
W	200111	Control Rod	1	BX	*70140	Cap Screw, Hex Hd. 5/16-18 x 3/4 Plated	1
X	200428	Spring - Traction Drive	1	BY	*70699	Washer Med. Flat 1/4 Plated	1
Y	200056	Spring - Tine Drive	1	BZ	*70721	Pin, Cotter 1/8 x 3/4 Plated	4
Z	200421	Bellcrank	1	CA	*70740	Pin, Cotter 3/32 x 5/8 Plated	2
AA	200455	Link	1	CB	*70388	Machine Screw Slotted Round Hd.No. 10-24 x 1" Plated	2
AB	200456	Control Rod	1	CC	*70540	Nut, Hex No. 10-24 Plated	2
AC	14273	Pivot Bushing	1	CD	*70672	Washer, Ext. Lock No. 10 Plated	2
AD	2762	Washer	2	CE	17002	Washer	2
AE	200613	Chain Case Assembly - Wheel Drive	1	CF	*70232	Cap Screw, Hex Hd. 3/8-16 x 1"	16
AF	208175	Chain Case Assembly - Tine Drive	1	CG	*70648	Washer, Spring Lock 3/8	19
AG	200194	Lug	2	CH	*70552	Nut, Hex 3/8-16	17
AH		Engine - 5 HP B&S Model 130292, Type 0803-01	1	CI	*70301	Cap Screw, Hex Hd. 3/8-24 x 1 3/4 H.T.	2
AI	200059	Belt Guard	1	CJ	*70162	Cap Screw, Hex Hd. 5/16-18 x 1 1/2	4
AJ	200112	Tine Shield	1	CK	*70441	Bolt, Carriage 5/16-18 x 3/4 Plated	4
AK	200459	Hinge	4	CL	*70133	Cap Screw, Hex Hd. 5/16-18 x 1/2 Plated	2
AL	200030	Rod	1	CM	*70168	Cap Screw, Hex Hd. 5/16-18 x 1 3/4 Plated	2
AM	200168	Guard Assembly	1	CN	*71090	Cap Screw, Hex Hd. 5/16-18 x 2 1/2	1
AN	208189	Tine Assembly - R.H.	1	CO	*70812	Key, Woodruff 3/16 x 3/4	1
AO	208192	Tine Assembly - L.H.	1	CP	208141	Retaining Ring	1
AP	200425	Tine - R.H.	4	CQ	208193	Washer - Back Up	2
AQ	200426	Tine - L.H.	4	CR	9627	Felt Seal	2
AR	1056	Felt Seal	2	CS	24764	Pyramidal Lock Washer	2
AS	11246	Felt Seal	2	CT	*70554	Nut, Hex 3/8-24	2
AT	9545	Washer	2	CU	35886	O-Ring	1
AU	200552	Tire & Wheel Assembly, Consists Of	1	CV	35887	Cup	1
	18945	Tire 13 X 5.00-6	1	CW	37141	Oil Level Plug	1
	18940	Wheel	1	CX	37128	Nylon Washer	1
	3823	Valve Cap	1	CY	18083	Oil Seal	2
	10631	Valve Stem	1				
AV	200553	Tire & Wheel Assembly, Consists Of	1				
	18945	Tire 13 X 5.00-6	1				
	18940	Wheel	1				
	3823	Valve Cap	1				
	10631	Valve Stem	1				
AW	*71079	Machine Screw, Slotted Flat Hd. 5/16-18 x 2 Plated	1				
AX	*70592	Nut, Square 5/16-18 Plated	1				
AY	*70149	Cap Screw, Hex Hd. 5/16-18 x 1" Plated	2				

\*Common hardware. May be purchased locally.

# CHAIN CASE PARTS



To replace all chain case seals and gaskets order Part No. 89428.

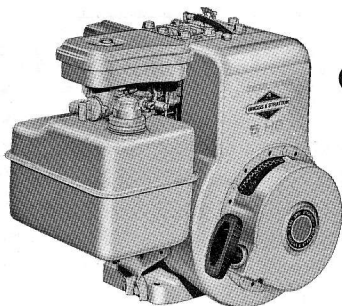
To replace entire chain case less tines order Part No. 89429.



# CHAIN CASE PARTS LIST

REF. LET.	PART NO.	DESCRIPTION	QTY.
A	208162	Chain Case Ass'y. - R.H. w/Bearings	1
B	208163	Chain Case Ass'y. - L.H. w/Bearings	1
C	1054	Seal - Tine Shaft	2
D	208176	Seal - Input Shaft	1
E	208052	Gasket	1
F	208051	Chain - Lower	1
G	208177	Chain - Upper	1
H	208186	Input Shaft Ass'y.	1
I	208178	Sprocket Ass'y. w/Bearings	1
J	4020	Idler Sleeve	1
K	208181	Tine Shaft Ass'y.	1
L	208184	Spacer Cup	1
M	39108	Shim - Gear	1-2
N	208141	Retaining Ring	2
O	208185	Washer - Input Shaft	2
P	27489	Pipe Plug	1
Q	*70364	Cap Screw Hex Hd. 1/2-20 x 3/4 Plated	1
R	*70088	Cap Screw Hex Hd. 1/4-20 x 1/2 H.T. & Plated	12
S	*70134	Cap Screw Hex Hd. 5/16-18 x 1/2 H.T. & Plated	3
T	*70628	Hex Nut, Lock 1/4-20 Plated	12
U	*70629	Hex Nut, Lock 5/16-18 Plated	3
V	*70877	Cap Screw, Hex Hd. 3/8-16 x 2 1/4 H.T.	1
W	*70631	Hex Nut, Lock 3/8-16 Plated	1
X	208174	Bearing - Input Shaft	2
Y	208173	Needle Bearing - Tine Shaft	2
Z	209007	Bearing	2

\*Common hardware. May be purchased locally.



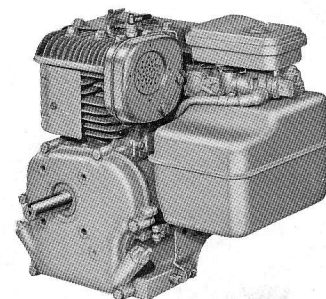
MONTGOMERY  
**WARD**

## OPERATING AND MAINTENANCE INSTRUCTIONS

MODEL SERIES

**100200 to 100299**  
**130200 to 131299**

**IN THE INTEREST OF SAFETY**



**DO NOT RUN ENGINE AT EXCESSIVE SPEEDS.** Operating an engine at excessive speeds increases the hazard of personal injury. **DO NOT TAMPER WITH PARTS WHICH MAY INCREASE THE GOVERNED SPEED.**

For rotary lawnmower safety, A.N.S.I. Standard Safety Specifications for Power Lawn Mowers specify a maximum blade tip speed of 19,000 feet per minute (96.5 meters per second), primarily to reduce the hazard from thrown objects.

Rotary lawnmower manufacturers select the governed top speed of the engine based on the length and design of the cutter blade and design of other mower parts.

All rotary lawnmowers should be checked for conformance to the A.N.S.I. Standard Safety Specifications for Power Lawn Mowers on blade tip speed, if the engine is repaired or replaced, or if mower parts are changed.

**DANGER: GASOLINE VAPOR IS HIGHLY FLAMMABLE.** Refuel outdoors preferably, or only in well ventilated areas.

**DO NOT STORE, SPILL OR USE GASOLINE NEAR AN OPEN FLAME** or devices such as a stove, furnace, water heater which utilize a pilot light, or devices that can create a spark.

If gasoline is accidentally spilled, move machine away from area of spill and avoid creating any source of ignition until gasoline vapors have dissipated.

**DO NOT REFUEL GASOLINE TANK WHILE ENGINE IS RUNNING.**

**DO NOT RUN THE ENGINE IN AN ENCLOSED AREA.** Exhaust gases contain carbon monoxide, an odorless and deadly poison.

**TO PREVENT ACCIDENTAL STARTING** always remove the spark plug from the engine, before working on the engine or equipment driven by the engine.

Except for adjustment; **DO NOT** operate engine if air cleaner or cover directly over carburetor air intake is removed. Removal of such part could create a fire hazard.

**DO NOT OPERATE WITHOUT A MUFFLER OR TAMPER WITH THE EXHAUST SYSTEM.** Damaged mufflers or spark arresters could create a fire hazard. Inspect periodically and replace if necessary.

**ALWAYS KEEP HANDS AND FEET CLEAR OF ROTATING PARTS.**

### IN THE INTEREST OF ENVIRONMENT

A muffler which leaks because of rust or damage can permit an increased exhaust noise level. Therefore, examine the muffler periodically to be sure it is functioning effectively. To purchase a new muffler, see **SERVICE AND REPAIR INFORMATION**.

**WARNING:** If this engine is not equipped with a spark arrester and is to be used on any forest covered, brush covered, or grass covered unimproved land, before using on such land a spark arrester must be added to the muffler. The arrester must be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. See your Authorized Briggs & Stratton Service Center for spark arrester muffler options.

## SERVICE & REPAIR INFORMATION

If service or repair is needed, contact an Authorized Briggs & Stratton Service Center. To serve you promptly and efficiently, the Service Center will need the model, type and code number on your engine.

Each Authorized Service Center carries a stock of original Briggs & Stratton repair parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines.

Major engine repairs should not be attempted unless you have the proper tools and a thorough knowledge of internal combustion engine repair procedure.

Your nearest service center is listed in the "Yellow Pages" under "Engines, Gasoline" or "Gasoline Engines". He is one of over 25,000 authorized dealers available to serve you.



yellow pages



This illustrated book includes "Theories of Operation", common specifications, and detailed information covering the adjustment, tune-up and repair procedures for 2 through 16 H.P. single cylinder models. It is available from any Authorized Briggs & Stratton Service Center. Order as Part Number 270962.

FORM NO. 270106-3/79  
PRINTED IN U.S.A.

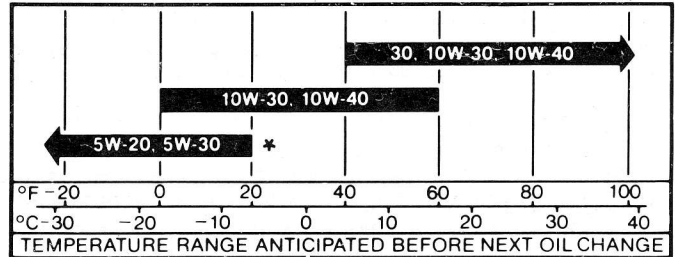
**BRIGGS & STRATTON CORP.**  
Milwaukee, Wisconsin 53201

# BEFORE STARTING

## READ THE OPERATING INSTRUCTIONS OF THE EQUIPMENT THIS ENGINE POWERS

Use a high quality detergent oil classified "For Service SC, SD, SE or MS." Detergent oils keep the engine cleaner and retard the formation of gum and varnish deposits. Nothing should be added to the recommended oil.

## RECOMMENDED SAE VISCOSITY GRADES

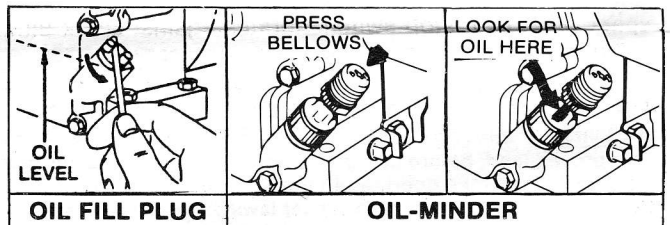


\*If not available, a synthetic oil may be used having 5W-20, 5W-30 or 5W-40 viscosity.

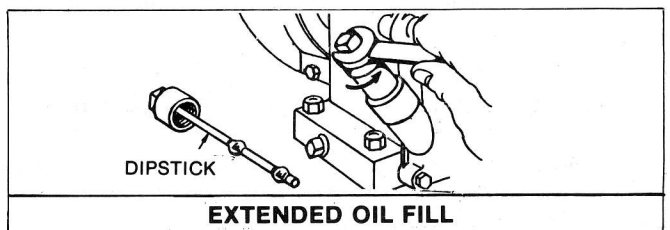
## TO FILL CRANKCASE WITH OIL

Place engine level. Clean area around oil fill before removing oil fill plug or oil minder.

**OIL FILL PLUG** Remove oil fill plug or (optional) oil-minder. Fill crankcase to point of overflowing. **POUR SLOWLY.** Capacity 1¼ pints (0.6 liters). Replace oil fill plug or oil-minder.



**EXTENDED OIL FILL.** (Optional) Remove cap and dipstick. **FILL TO FULL MARK** on dipstick, **POUR SLOWLY.** Capacity 1¼ pints (0.6 liters). When checking oil level, screw dipstick assembly firmly but slowly until cap bottoms on tube. **DO NOT OVERFILL.** Dipstick assembly must be securely assembled to tube at all times when engine is operating.

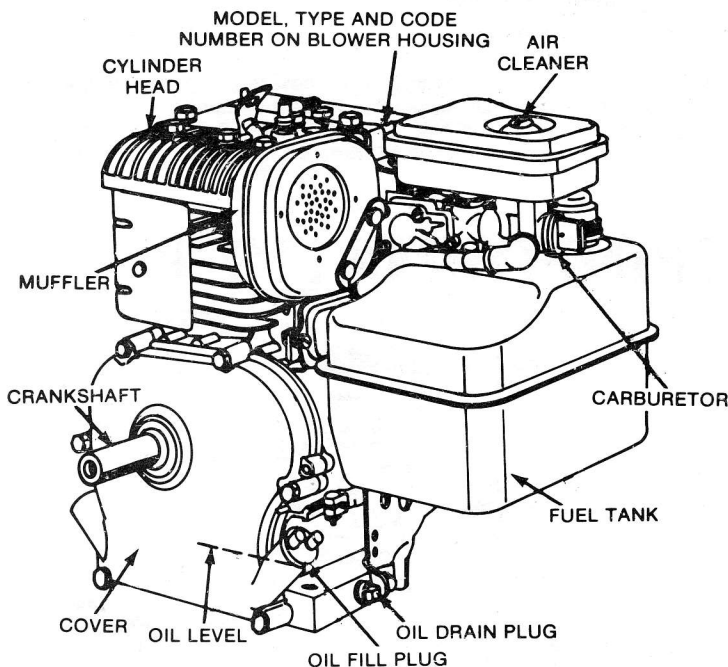
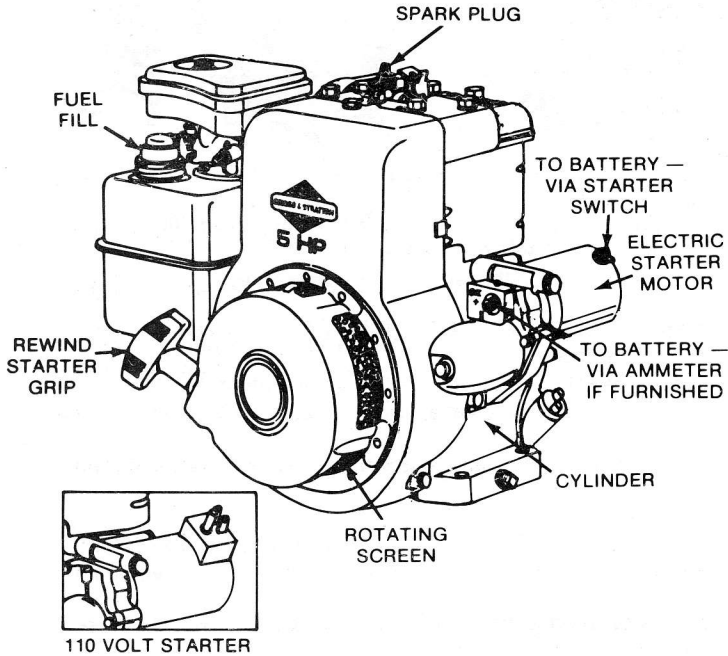


## CHARGE BATTERY

Charge battery before use on engines equipped with (OPTIONAL) 12V electric starter motor. See equipment manufacturers recommendations.

## FILL FUEL TANK

Use clean, fresh "regular, low-lead or lead-free" grade gasoline. **DO NOT MIX OIL WITH GASOLINE.**

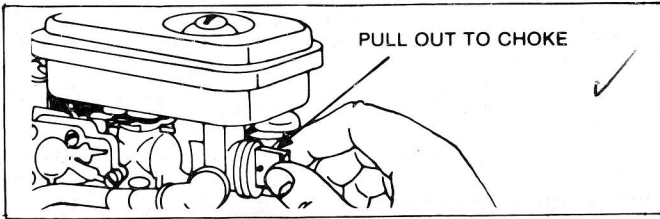


# STARTING

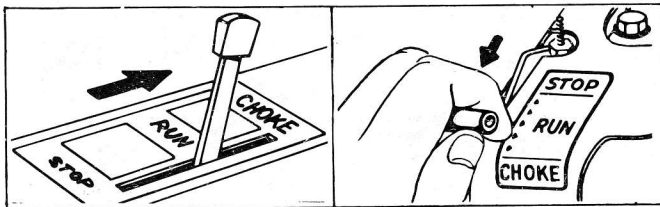
Start, store and fuel engine in a level position.

**CHOKE ENGINE** — Engine may be equipped with either Manual, Choke-A-Matic or Lever-Trol controls.

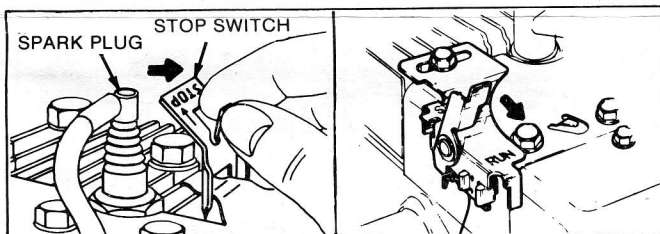
**MANUAL CHOKE:** Pull choke as illustrated.



**CHOKE-A-MATIC and LEVER-TROLL** — Move controls as far as possible toward "Choke" or "Start."



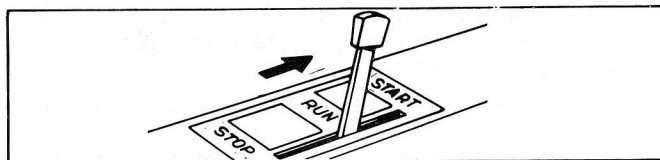
**STOP SWITCH:** Move STOP switch away from spark plug as illustrated, if so equipped.



**NOTE:** A warm engine requires less choking than a cold engine.

**NOTE:** Engine may not start if controls on powered equipment do not close choke fully. See ADJUSTMENT section.

**GOVERNOR SPEED CONTROL LEVER:** Move governor throttle control lever to "RUN," "FAST" or "START" position if so equipped.

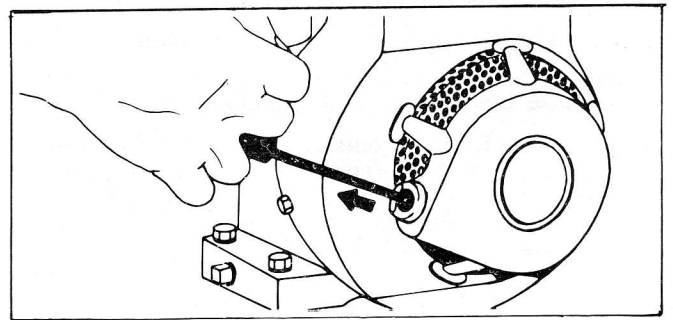


## TO START ENGINE

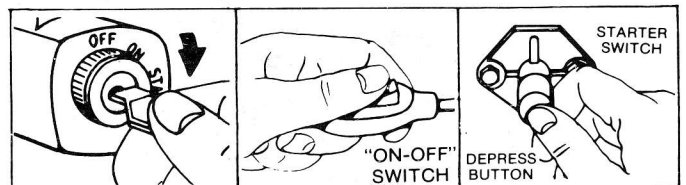
**DANGER:** ALWAYS KEEP HANDS AND FEET CLEAR OF MOWER BLADE OR OTHER ROTATING MACHINERY.

**Rewind Starter.** (Can be used to start engine if the battery is run low or if engine cannot be started electrically. Place engine controls in "Start" and key in "On" position.) Grasp starter handle as illustrated and pull out cord rapidly to overcome compression and prevent kickback. Repeat if

necessary with choke opened slightly. When engine starts, open choke gradually.



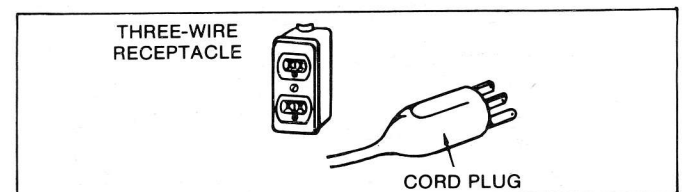
**Electric Starter.** On engines equipped with 12 volt starting systems, turn key to "START" position or press starter button. On engines equipped with 120 volt starting systems press "On" button of conductor cord's integral "On-Off" switch. Release as soon as engine starts and gradually open choke.



## Tips to obtain best electric starter performance

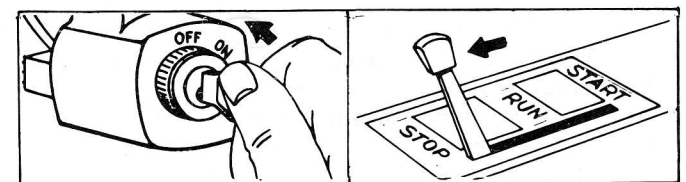
- Short starting cycles (2 to 3 seconds) provide the longest battery life.
- Keep the battery fully charged. This assures quick and easy starts.
- Disengage load from engine during start.

**CAUTION:** The 120 volt electric starter is equipped with a three-prong plug for your safety. The longer prong in this plug is connected to the starter motor housing. When the starter motor is plugged into the three wire cord supplied, and the cord is plugged into a properly grounded receptacle, it will protect the user from shock should the starter motor insulation fail for any reason. If a longer extension cord is used with this starter it should also have three-prong and three-hole plugs.



## TO STOP ENGINE

Turn key to "OFF" position or move control lever to "STOP" position.

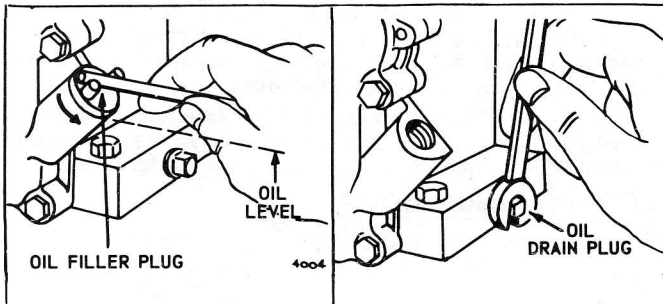


**CAUTION:** Always remove key from switch when leaving equipment unattended or when equipment is not in use.

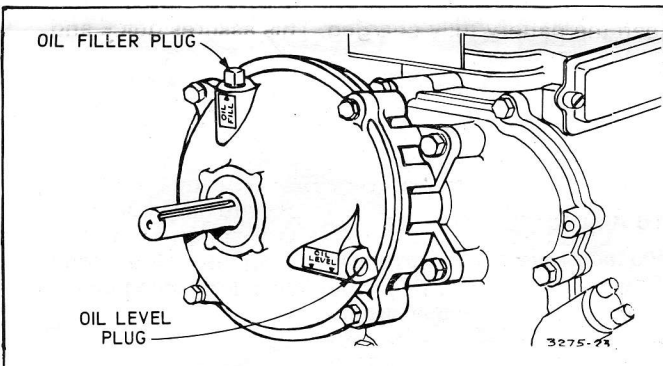
# MAINTENANCE

**CHECK OIL LEVEL** regularly — after each five hours of operation. **BE SURE OIL LEVEL IS MAINTAINED.**

**CHANGE OIL** after first five hours of operation. Thereafter change every 25 hours of operation. Remove oil drain plug and drain oil while engine is warm. Replace drain plug. Remove oil fill plug or oil-minder and refill with new oil of proper grade. Replace oil fill plug or oil-minder.



**CHANGE OIL (GEAR REDUCTION optional)** Remove oil level plug and oil fill plug. Drain oil every 100 hours of operation. To refill, pour 10W-30 oil into filler hole until it runs out level check hole. Replace both plugs. Oil fill plug has a vent hole and must be installed on top of gear case cover.

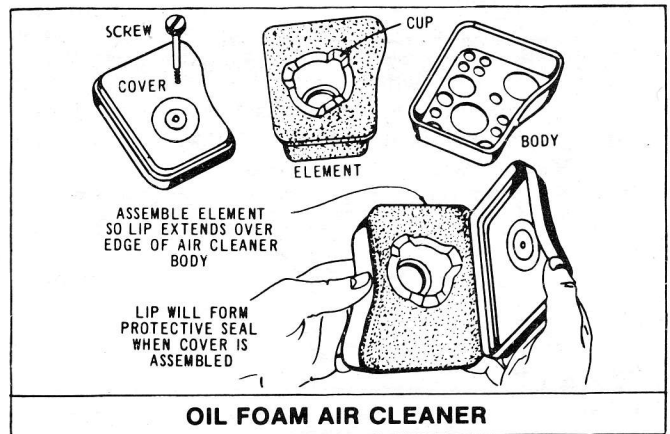


## TO SERVICE AIR CLEANER "OIL FOAM" AIR CLEANER

Clean and re-oil foam element at three month intervals or every 25 hours, whichever occurs first.

**NOTE:** Service air cleaner more often under dusty conditions.

1. Remove screw.
2. Remove air cleaner carefully to prevent dirt from entering carburetor.
3. Take air cleaner apart and clean.
  - a. **WASH** foam element in a liquid detergent and water to remove dirt.
  - b. Wrap foam in cloth and squeeze dry.
  - c. **Saturate** foam with engine oil. Squeeze to remove excess oil.
4. Reassemble parts and fasten to carburetor securely with screw.

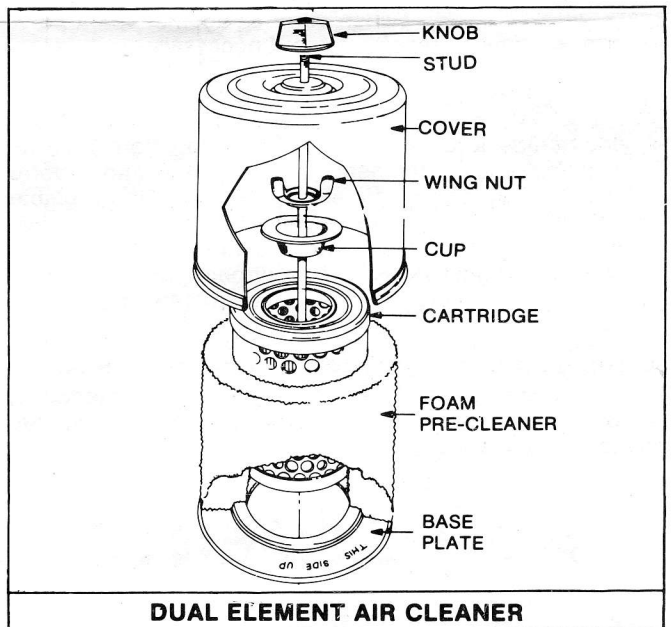


## DUAL ELEMENT AIR CLEANER

Clean and re-oil foam pre-cleaner at three month intervals or every 25 hours, whichever occurs first.

**NOTE:** Service more often under dusty conditions.

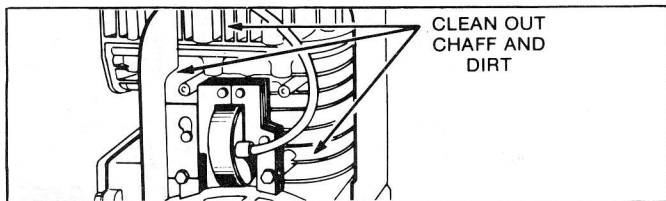
1. Remove knob and cover.
2. Remove foam pre-cleaner by sliding it off of the paper cartridge.
3.
  - a. Wash foam pre-cleaner in liquid detergent and water.
  - b. Wrap foam pre-cleaner in cloth and squeeze dry.
  - c. **Saturate foam pre-cleaner in engine oil.** Squeeze to remove excess oil.
4. Install foam pre-cleaner over paper cartridge. Reassemble cover and screw down tight.



Yearly or every 100 hours, whichever occurs first, remove paper cartridge. (Service more often if necessary.) Clean by tapping gently on flat surface. If very dirty, replace cartridge, or wash in a low or non-sudsing detergent and warm water solution. Rinse thoroughly with flowing water from inside out until water is clear. Cartridge must be air dried thoroughly before using.

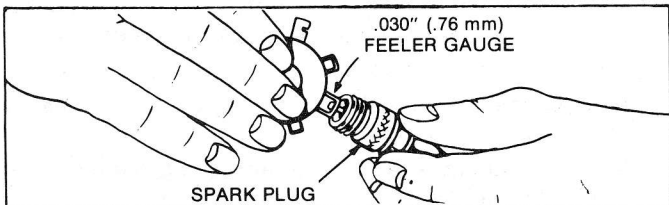
**CAUTION:** Petroleum solvents are not to be used to clean cartridge. They may cause deterioration of the cartridge. **DO NOT OIL CARTRIDGE. DO NOT USE PRESSURIZED AIR.**

**CLEAN COOLING SYSTEM** — Grass, chaff or dirt may clog the rotating screen and the air cooling system, especially after prolonged service cutting dry grass. Yearly or every 100 hours, whichever occurs first, remove the blower housing and clean the areas shown to avoid over-speeding, overheating and engine damage. Clean more often if necessary.



**DANGER:** Periodically clean muffler area to remove all grass, dirt and combustible debris.

**SPARK PLUG** — Clean and reset gap at .030" every 100 hours of operation.



**CAUTION:** Do not blast clean spark plug. Spark plug should be cleaned by scraping or wire brushing and washing with a commercial solvent.

Sparking can occur if wire terminal does not fit firmly on spark plug, or if stop switch vibrates against spark plug. Reform terminal or repair switch if necessary.

**REMOVE COMBUSTION DEPOSITS** every 100-300 hours of operation. Remove cylinder head and cylinder head shield. Scrape and wire brush the combustion deposits from cylinder, cylinder head, top of piston and around valves. Use a soft brush to remove deposits. Re-assemble gasket, cylinder head and cylinder head shield. Turn screws down finger tight with the three longer screws around the exhaust valve, if so equipped. Torque cylinder head screws in a staggered sequence to 140 inch pounds (15.82 Nm).

**SPARK ARRESTER EQUIPPED MUFFLER** — If engine muffler is equipped with spark arrester screen assembly, remove every 50 hours for cleaning and inspection. Replace if damaged.

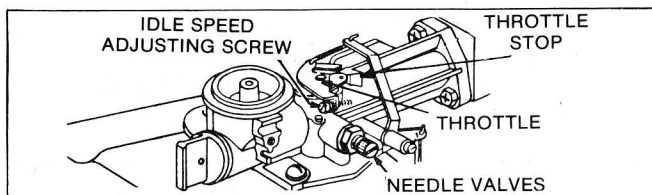
## ADJUSTMENTS

### CARBURETOR ADJUSTMENTS

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude or load.

**TO ADJUST CARBURETOR** — Turn needle valve clockwise until it just closes.

**CAUTION:** Valve may be damaged by turning it in too far. Now open needle valve 1½ turns counterclockwise. This initial adjustment will permit the engine to be started and warmed up prior to final adjustment.



### FINAL ADJUSTMENT

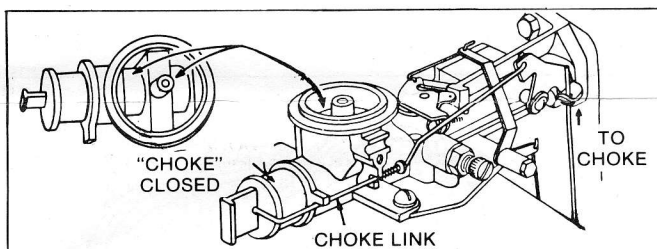
Place governor speed control lever in "FAST" position. Turn needle valve in until engine misses (clockwise — lean mixture) then turn it out past smooth operating point until engine runs unevenly (rich mixture). Now turn needle valve to the midpoint between rich and lean so the engine runs smoothly. Next, adjust idle RPM. Rotate throttle counterclockwise and hold against stop. Adjust idle speed adjusting screw to obtain 1750 RPM. Release throttle — engine should accelerate without hesitation or sputtering. If engine does not accelerate properly, the carburetor should be re-adjusted, usually to a slightly richer mixture.

### CONTROL ADJUSTMENTS:

Proper choke and speed control operation is dependent upon proper adjustment of remote controls on the powered equipment.

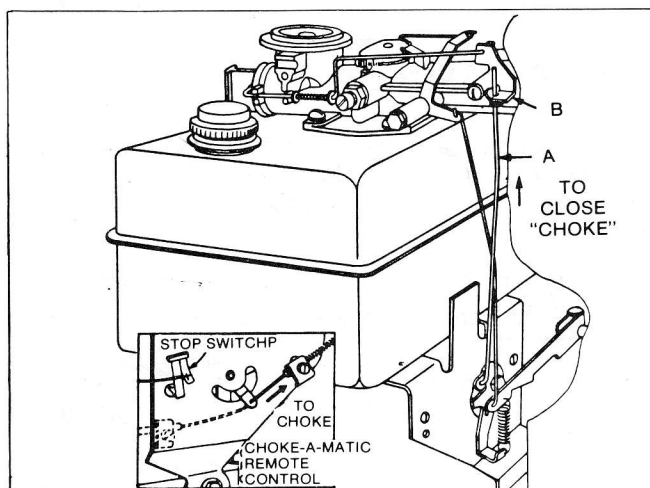
### TO CHECK OPERATION OF CHOKE CONTROLS:

Remove air cleaner. Move remote control lever to "CHOKE" or "START" position. Choke should be fully closed as shown. Replace air cleaner.



### To Adjust:

Place remote control lever on equipment in FAST position. Choke operating link "A" should be just touching bell crank lever at "B." See illustration.



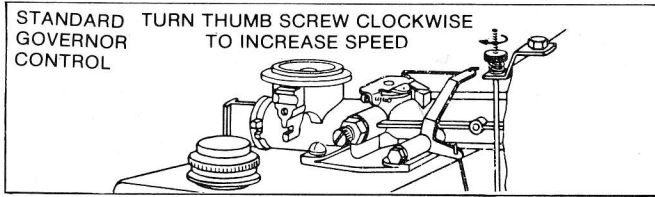
### SPEED CONTROL ADJUSTMENT

The acceptable operating speed range is 1800 to 3600 RPM. Idle speed is 1750 RPM. The manufacturer of the equip-

ment on which the engine is used, specifies the top governed no load speed at which the engine may be operated. DO NOT EXCEED this speed.

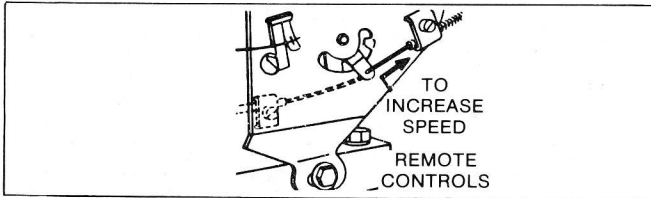
### STANDARD SPEED CONTROL ADJUSTMENT

Speed adjusting thumb nut is located on top of engine. To increase speed turn thumb nut clockwise.



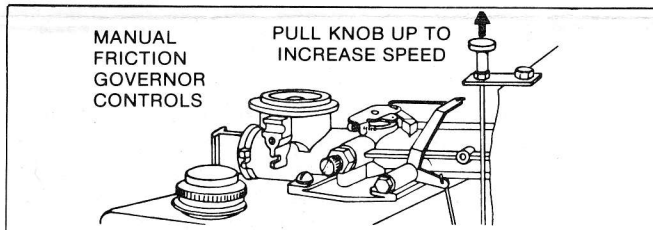
### REMOTE SPEED CONTROL

Controls on powered equipment should move speed lever in direction illustrated to increase speed. Remote controls may be connected to engine at points indicated. Wire travel is shown by arrows.



### MANUAL SPEED CONTROL

Move knob as shown to change engine speed.



## GENERAL INFORMATION

This engine is a single-cylinder, L-head, air-cooled type.

#### MODEL SERIES 100200 to 100299

Bore ..... 2-1/2" (63.5 mm)  
 Stroke ..... 2-1/8" (53.98 mm)  
 Displacement ..... 10.43 cu. in. (170.9 cc)  
 Horsepower ..... 4.0 max. @ 3600 RPM  
 Torque (Ft. Lbs.) ..... 5.93 max. @ 3050 RPM

#### MODEL SERIES 130200 to 131299

Bore ..... 2-9/16" (65.09 mm)  
 Stroke ..... 2-7/16" (61.91 mm)  
 Displacement ..... 12.57 cu. in. (206.0 cc)  
 Horsepower ..... 5.0 max. @ 3600 RPM  
 Torque (Ft. Lbs.) ..... 7.66 max. @ 3000 RPM

The horsepower rating listed is established in accordance with the Society of Automotive Engineers Test Code - J607. For practical operation, the horsepower loading should not

BRIGGS & STRATTON ENGINES ARE MADE UNDER ONE OR MORE OF THE FOLLOWING PATENTS.

2.999.491	3.194.224	3.276.439	3.526.146	3.625.071	28.960	3.961.724
2.999.562	3.236.937	3.305.223	3.572.218	3.650.354	3.831.268	3.968.854
3.114.851	3.242.741	3.457.804	3.572.307	3.745.393	3.882.336	3.971.353
3.118.433	3.252.449	3.465.740	3.625.492	3.738.345	3.901.199	3.991.152
3.149.618						

exceed 85% of this rating. Engine power will decrease 3½% for each 1,000 feet (304.8 m) above sea level and 1% for each 10° above 60° F (16° C).

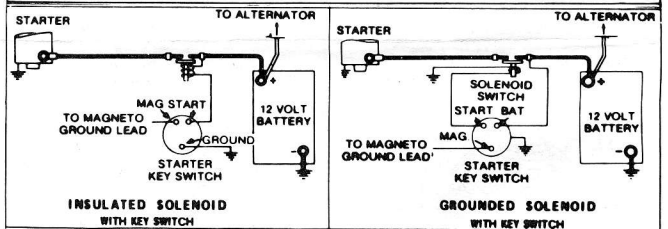
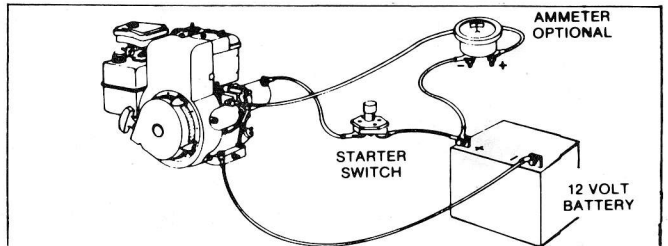
In some areas, local law requires the use of a resistor spark plug so as to suppress ignition signals. If an engine was originally equipped with a resistor spark plug, be sure to use the same type of spark plug for replacement.

### TUNE-UP SPECIFICATIONS

Spark Plug Type	Champion	Autolite	Robert Bosch
Short Plug	CJ-8	235	WS9E
Long Plug	J-8	295	—
Resistor Short Plug	RCJ-8	245	WSR9E
Resistor Long Plug	RJ-8	306	—

Spark Plug Gap ..... .030" (.76 mm)  
 Ignition Point Gap ..... .020" (.51 mm)  
 Intake Valve Clearance ..... .005" - .007" (.13 - .18 mm)  
 Exhaust Valve Clearance ..... .009" - .011" (.23 - .28 mm)

**WARNING:** For electrical safety always remove cable from negative (-) side of the battery before attempting any repairs or maintenance.



### STORAGE INSTRUCTIONS

Engines to be stored over 30 days should be completely drained of fuel to prevent gum deposits forming on essential carburetor parts, fuel filter and tank.

The use of a fuel additive, such as STA-BIL, or an equivalent, will minimize the formation of fuel gum deposits during storage. Such an additive may be added to the gasoline in the fuel tank of the engine, or to the gasoline in a storage container.

- All fuel should be removed from the tank. Run the engine until it stops from lack of fuel. The small amount of fuel that remains in the sump of the tank should be removed by absorbing it with a clean, dry cloth.
- While engine is still warm, drain oil from crankcase. Refill with fresh oil.
- Remove spark plug, pour one ounce (29.6 cc) of engine oil into cylinder and crank slowly to distribute oil. Replace spark plug.
- Clean dirt and chaff from cylinder, cylinder head fins, blower housing, rotating screen and muffler areas.
- Store in a clean and dry area.